

FACE INVESTIGATION

SUBJECT: Farmer's Helper Dies of Asphyxiation in Grain Bin

SUMMARY: A 63-year old male farmer's helper (the victim) died after becoming engulfed in shelled corn inside a grain storage bin. The bin was located on the farmer's property and was approximately one-half filled at the time of the incident (3,000 bushels). The farmer had called upon his cousin (farmers' helper-victim) to help him unload corn from the storage bin into a wagon using a grain auger to facilitate the emptying process. The victim and the farmer were working together. The farmer reports that he had been inside the bin with his cousin. Just prior to the incident, he had exited the bin and gone down to check the flow of corn into the truck below. He then climbed back up to the top of the bin and heard his cousin yell for help from inside the bin. The victim (his cousin) had entered the bin to probe the corn with a rod to break up moldy corn that had crusted over and created a pocket that interrupted the flow. Apparently when the victim broke through the crust with the rod he was drawn down with the flow and became engulfed in the corn. The farmer shut down the auger and entered the bin and tried to dig through the grain to free the victim and being unsuccessful called 911. Emergency services arrived within 8 minutes but they could not locate the victim who had slid deep within the 3,000 bushels of corn. Torches were used to cut the bin to allow for removal of the corn and access to the victim. When the victim was extracted from the corn bin approximately 90 minutes had elapsed. The county coroner pronounced the victim dead at the scene. The Wisconsin FACE investigator concluded that, in order to prevent similar occurrences, employers/farmers should:

- ! Ensure that life lines and harnesses are present and used at entrance points to confined spaces (e.g. grain storage bins) containing unstable materials.**
- ! Ensure that a standby person is available when work is being performed in a confined space and that visual and verbal contact is continuous.**
- ! Ensure that posted danger signs are adhered to.**

INTRODUCTION: On December 1, 1992, a 63-year-old male farmer's helper died after being engulfed in corn in a grain storage bin. The Wisconsin FACE investigator was notified by the Wisconsin Department of Industry, Labor and Human Relations on January 11, 1993. On June 7, 1993, the WI FACE field investigator conducted an investigation of the incident. The incident was reviewed with the farm owner on the farm where the incident occurred. Photographs of the incident site were not taken as the farmer did not wish them taken. Copies of the coroner's report and death certificate were obtained as well as news clippings.

The victim had assisted the farmer occasional farm work for 2 years. He usual occupation was as a supervisor at a machine engine manufacturing plant. The farmer indicated that the victim had done this type of work before with him and that both of them were aware of the hazards related to grain storage bins.

There was no written safety policy or safety program, but the owner of the farm indicated that he and his cousin (victim) were well aware of the that storage bin were not to be entered without a person standing by.

INVESTIGATION: On the day of the incident, the victim had been working with his cousin, the farm owner, emptying grain from a grain storage bin that was filled with approximately 3,000 bushels of dried corn. The farmer and the victim were in the process of using a grain auger installed in the concrete base of the bin to facilitate unloading a portion of the corn from the bin to a truck. Both the victim and the farmer had been inside the bin breaking away the crusted corn that was inhibiting the flow. The farmer had gotten out of the bin and had gone down to check on the grain as it flowed into the truck. The truck had been positioned under the loading chute to receive the grain and was not flowing freely so the farmer turned the grain auger off and climbed the ladder to the top of the bin to investigate. The victim, whose task was to work inside the bin breaking through crusts of moldy corn with a rod yelled out for help and the farmer immediately entered the bin to help him. When he was unable to reach him, the farmer ran to his home which was located about 200 yards from the bin and called 911. Rescuers were on site within 8 minutes and entered the bin to remove corn and to locate and extricate the victim. Ninety minutes later, after shoveling the corn out and cutting a hole in the base of the bin to remove corn, the victim was located and pronounced dead on the scene by the coroner.

CAUSE OF DEATH: The death certificate listed the immediate cause of death as cardiopulmonary failure secondary to anoxia and traumatic asphyxiation.

RECOMMENDATIONS/DISCUSSION:

Recommendation #1: Employers/farmers should ensure that life lines and harnesses are present and used at entrance points to confined spaces (e.g. grain storage bins) containing unstable materials.

Discussion: Life lines and harnesses should be present at the entrance(s) of confined spaces containing unstable materials (e.g., shelled corn, beans, sawdust, etc.), and should be used by all persons entering the confined space. If these are not provided by the manufacturer they should be installed by the user prior to entry into the confined space. A life line and harness might have prevented this fatality.

Recommendation #2: Employers/farmers should ensure that a standby person is available when work is being performed in a confined space.

Discussion: A standby person stationed outside of confined spaces containing unstable materials should

maintain constant communication with the worker inside the area. If visual contact cannot be maintained, the standby person should at least maintain voice contact. In this instance, discovery of the incident was within minutes but given that no life line or harness had been used, the would-be rescuer was helpless. In spite of immediate discovery of the incident and prompt response by trained emergency personnel, absence of a life line or safety harness made it impossible to locate and extricate the victim.

Recommendation #3: Employers/farmers should ensure that posted danger signs are adhered to.

Discussion: The door providing access into the interior of the storage bin was posted with a legible danger sign. The sign contained examples of dangers within the bin and the subsequent recommendations for safe entry into the bin. Personnel entering grain storage bins should read and follow the recommendations as listed.